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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,565	09/29/2003	Yoichi Kodama	018765-144	4272

21839 7590 05/17/2006

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EXAMINER

RAZA, SAIRA B

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 05/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/671,565	KODAMA ET AL.	
	Examiner	Art Unit	
	Saira Raza	1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/17/2006</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaya et al. in view of Matsuura et al. (US 5,508,357).

3. Yamaya applies as above, teaching the combination of polyimides and bismaleimides applied to glass and metal plates but failing to teach the compositions applied to metal foils or polyimides and metal foils. Yamaya discloses 1,3-bis(3-maleimidophenoxy)benzene, which meets the newly added limitation regarding the meta-position substitution (col. 4, lines 60-61, Table 1 (Ex. 16 & 17)). Matsuura teaches similar polyimide/bismaleimide thermosetting compositions, where the materials are applied to metal foils and as adhesives between polyimide films and metal foils (col. 11 lines 51-62; col. 12 lines 34-63). The articles are formed to provide substrates for flexible printed circuit boards or TAB tapes. It is the examiner's position that it would have been prima facie obvious to use the polyimide/bismaleimide compositions of Yamaya's invention applied to metal foils or between polyimide films and metal foils to form substrates for flexible printed circuit boards or TAB tapes having Yamaya's improved toughness, flexibility, adhesion, and heat resistance properties.

4. Regarding the limitations drawn to the polyimide, Yamaya teaches polyimides fitting the claimed formulas (1) and (4) (col. 1 line 54-col. 2 line 30; examples).

Art Unit: 1711

5. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuura et al. in view of Yamaya et al.

6. Matsuura teaches thermosetting blends of polyimide and bismaleimide (abstract), where the preferred polyimides fit the applicant's formulas (1) and (4) (col. 3 lines 16-53). The materials are applied to metal foils or between polyimide films and metal foils (col. 11 lines 51-62; col. 12 lines 34-63). However, the bismaleimides exemplified having three phenyl groups do not have the claimed radical for X (col. 9). Yamaya teaches similar polyimide/bismaleimide thermosetting materials, where the bismaleimides contain 2-4 phenyl groups and have linking groups of oxygen, direct bonds, carbonyl groups, sulfonyl groups, and sulfinyl groups (col. 2 lines 32-68). Yamaya discloses 1,3-bis(3-maleimidophenoxy)benzene, which meets the newly added limitation regarding the meta-position substitution (col. 4, lines 60-61, Table 1 (Ex. 16 & 17)). The examples indicate that those materials made with compounds fitting the applicant's formula have lower softening points and higher tensile shear strengths than those made with N,N'-diphenylmethane bismaleimide, a compound exemplified by Matsuura (Yamaya, table 1; Matsuura, example 4). It is the examiner's position that it would have been prima facie obvious to use the bismaleimides of Yamaya's invention in Matsuura's invention to provide improved tensile shear strengths and lower softening points to the compositions.

Declaration under 37 CFR 1.132

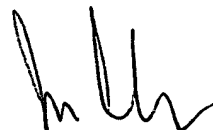
7. The declaration under 37 CFR 1.132 filed March 17, 2006 is insufficient to overcome the rejection of claims 1-4 as rejected above, because Yamaya indeed does disclose the bismaleimide compound linked at the meta position.

Art Unit: 1711

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saira Raza whose telephone number is (571) 272-3553. The examiner can normally be reached on Monday-Friday from 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



James J. Seidleck
Supervisory Patent Examiner
Technology Center 1700